In the Claims:

Claims 1-20 are pending as follows:

1. (previously presented) A scheduling method for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps comprising the steps of:

sequentially accessing a subset of time stamp data from a time stamp aging memory array; each time stamp data subset containing time stamp data for a subplurality of flows;

performing guaranteed aging processing steps for each flow utilizing said time stamp data subsets to identify and mark invalid calendar next time values,

identifying a new frame arrival for an empty flow and accessing time stamp data from a flow queue control block (FQCB) for said flow and said flow time stamp data in said time stamp aging memory array;

responsive to said identified new frame arrival for said empty flow, checking a selection indicator of said time stamp aging memory array data to identify said target calendar for attaching said flow; each flow being attached to at least one of a plurality of calendars including a low latency service (LLS)/normal latency service (NLS), a peak bandwidth service (PBS) and a weighted fair queue (WFQ) ring; said LLS, NLS, and PBS calendars being time based; said weighted fair queue (WFQ) ring being weight based;

responsive to said selection indicator value, checking a target calendar next time valid bit of said time stamp aging memory array data for said flow;

responsive to said target calendar next time valid bit being on, comparing a target calendar next time from said flow queue control block (FQCB) for said flow with a current time;

responsive to said target calendar next time being less than said current time, turning off said target calendar next time valid bit to mark said target calendar next time as invalid.

2. (original) A scheduling method for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 1 includes the steps of storing time stamp data for each flow in said flow queue control block (FQCB) and in said time stamp aging memory array; said flow queue control block (FQCB) for each flow stored in external static random access memory (SRAM) and said time stamp aging memory array stored in an internal scheduler memory array.

3. (original) A scheduling method for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 2 wherein the steps of storing time stamp data includes the steps of:

identifying a flow for servicing on a calendar and dispatching a frame from said identified flow;

calculating a calendar next time value for said identified flow; and

storing said calendar next time value for said identified flow in said flow queue control block (FQCB) for said identified flow; and

storing time stamp data in said time stamp aging memory array; said stored time stamp data in said time stamp aging memory array including at least a portion of said

calendar next time value; said selection indicator and said calendar valid bit set to mark said calendar next time as valid.

4. (original) A scheduling method for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 1 wherein said guaranteed aging processing steps for each flow in said time stamp data subset include the steps of;

checking said selection indicator, said selection indicator indicating a calendar;

responsive to said selection indicator, checking said calendar next time valid bit;

responsive to said calendar next time valid bit being on, comparing a calendar next time with a current time; and

responsive to said calendar next time being less than said current time, turning off said calendar next time valid bit to mark said calendar next time as invalid.

5. (previously presented) A scheduling method for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 1 wherein said target calendar is said peak bandwidth service (PBS) calendar and further include the step responsive to said PBS valid bit being off, of attaching said flow to sadi weighted fair queue (WFQ) ring using a queue distance calculation.

6. (previously presented) A scheduling method for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 1 wherein said target calendar is said peak bandwidth service (PBS) calendar and further include the step responsive to said PBS valid bit being on, of attaching said flow to said PBS calendar using a PBS next time value.

7. (previously presented) A scheduling method for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 1 wherein said target calendar is said low latency service (LLS)/normal latency service (NLS) calendar and further include the step responsive to said LLS/NLS valid bit being off, of attaching said flow to said LLS/NLS calendar using said current time value.

8. (previously presented) A scheduling method for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 1 wherein said target calendar is said low latency service (LLS)/normal latency service (NLS) calendar and further include the step responsive to said LLS/NLS valid bit being on, of attaching said flow to said LLS/NLS calendar using a LLS/NLS next time value.

9. (previously presented) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps comprising:

a queue manager;

a plurality of calendars coupled to said queue manager for scheduling flows;

a memory coupled to said queue manager for storing a flow queue control block (FQCB) for each of said plurality of flows;

a time stamp aging memory array coupled to said queue manager for storing a set of indicator bits and time stamp data for each of said plurality of flows; said set of indicator bits including a calendar selector and at least one calendar next time valid bit;

a memory manager for sequentially accessing a subset of time stamp data from an time stamp aging memory array; each time stamp data subset containing time stamp

data for a subplurality of flows; said memory manager for performing guaranteed aging processing steps for each flow in each time stamp data subset to identify and mark invalid calendar next time values,

said queue manager for identifying a new frame arrival for an empty flow;

said memory manager responsive to said new frame arrival for said empty flow for accessing time stamp data from a flow queue control block (FQCB) for said flow and said time stamp data in said time stamp aging memory array;

said memory manager responsive to said identified new frame arrival for said empty flow, for identifying a target calendar for attaching said flow; each flow being attached to at least one of a plurality of calendars including a low latency service (LLS)/normal latency service (NLS), a peak bandwidth service (PBS) and a weighted fair queue (WFQ) ring; said LLS, NLS, and PBS calendars being time based; said weighted fair queue (WFQ) ring being weight based;

said memory manager responsive to said identified target calendar, for checking said target calendar next time valid bit of said time stamp aging memory array data for said flow;

said memory manager responsive to said target calendar next time valid bit being on, for comparing a target calendar next time value from said flow queue control block (FQCB) for said flow with a current time;

said memory manager responsive to said target calendar next time being less than said current time, for turning off said target calendar next time valid bit to mark said target calendar next time as invalid.

10. (original) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 9 wherein said memory coupled to said queue manager for storing a flow queue control block (FQCB) for each of said plurality of flows includes an external static random access memory (SRAM).

11. (original) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 9 wherein said time stamp aging memory array includes an internal memory array.

12. (previously presented) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 9 wherein said plurality of calendars coupled to said queue manager for scheduling flows includes said low latency service (LLS)/normal latency service (NLS) calendar; said peak bandwidth service (PBS) calendar; and said weighted fair queue (WFQ) ring.

13. (original) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 12 wherein said set of indicator bits includes said calendar selector for selecting said PBS calendar or said LLS/NLS calendar.

14. (original) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 13 wherein said at least one calendar next time valid bit includes a PBS next time valid bit and a LLS/NLS next time valid bit.

15. (original) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 14 wherein said queue manager responsive to said PBS calendar identified as said target calendar and said PBS next time valid bit being off, for attaching said flow to said weighted fair queue (WFQ) ring using a queue distance calculation.

16. (original) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 14 wherein said queue manager responsive to said PBS calendar identified as said target calendar and said PBS next time valid bit being on, for attaching said flow to said PBS calendar using said PBS next time value.

17. (original) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 14 includes wherein said queue manager responsive to said LLS/NLS calendar selected as said target calendar and said LLS/NLS next time valid bit being off, for attaching said flow to said LLS/NLS calendar using said current time value.

18. (original) A scheduler for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps as recited in claim 14 includes wherein said queue manager responsive to said LLS/NLS calendar selected as said target calendar and said LLS/NLS next time valid bit being on, for attaching said flow to said LLS/NLS calendar using said LLS/NLS next time value.

19. (previously presented) A computer program product for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps in a

scheduler, said computer program product including a plurality of computer executable instructions stored on a computer readable medium, wherein said instructions, when executed by said scheduler, cause said scheduler to perform the steps of:

sequentially accessing a subset of time stamp data from an time stamp aging memory array; each time stamp data subset containing time stamp data for a subplurality of flows;

performing guaranteed aging processing steps for each flow on a scheduler calendar in each time stamp data subset to identify and mark invalid calendar next time values,

identifying a new frame arrival for an empty flow and accessing time stamp data from a flow queue control block (FQCB) for said flow and said time stamp data in said time stamp aging memory array;

responsive to said identified new frame arrival for said empty flow, checking a selection indicator of said time stamp aging memory array data to identify said target calendar for attaching said flow; each flow being attached to at least one of a plurality of calendars including a low latency service (LLS)/normal latency service (NLS), a peak bandwidth service (PBS) and a weighted fair queue (WFQ) ring; said LLS, NLS, and PBS calendars being time based; said weighted fair queue (WFQ) ring being weight based;

responsive to said selection indicator value, checking a target calendar next time valid bit of said time stamp aging memory array data for said flow;

responsive to said target calendar next time valid bit being on, comparing a

target calendar next time from said flow queue control block (FQCB) for said flow with a current time; and

responsive to said target calendar next time being less than said current time, turning off said target calendar next time valid bit to mark said target calendar next time as invalid.

20. (original) A computer program product for implementing Quality-of-Service (QoS) scheduling of a plurality of flows with aging time stamps in a scheduler as recited in claim 18 wherein said instructions, when executed by said scheduler, cause said scheduler to perform the steps of storing said flow queue control block (FQCB) for each of said plurality of flows in an external memory; and storing a set of indicator bits and time stamp data for each of said plurality of flows in a time stamp aging memory array, said set of indicator bits including said selector indicator and said calendar next time valid bit.